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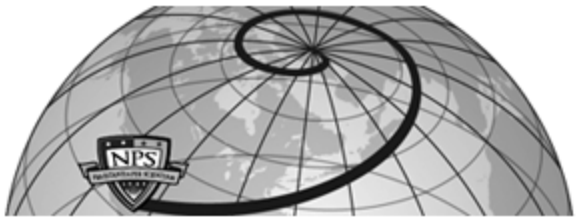

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MONTEREY, CALIFORNIA

THESIS

ERROR–AVOIDANCE THEORY: SNIPER EMPLOYMENT FOR MILITARY AND CIVILIAN LAW ENFORCEMENT

by

Joshua D. Roberts

December 2013

Thesis Advisor: Bradley Strawser
Second Reader: Leo Blanken

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13. ABSTRACT

Sniper operations are high risk, high reward missions with unique traits and distinctive capabilities often resulting in great success or punishing failure. Within nearly all conceptions of sniper operations there is a perceived difference between civilian and military sniper engagements. This thesis presents an error-avoidance theory for guiding successful sniper operations across both domains. Inside sniper operations there are two critical errors that need to be avoided. These errors are defined as Type 1 and Type 2 errors. Type 1 errors are those that result in the death of an innocent individual. Type 2 errors occur when the targeted individual escapes the situation and the mission objective is not met, and thus the threat or potential threat remains active. Naturally, the goal is to avoid both errors. However, the rules of engagement established for any mission must, by necessity, privilege the avoidance of one error type over the other. The evaluation of three critical variables—operational environment, political and social context, and the stakes or risk in the situation—should prioritize which error to avoid. This thesis thereby establishes a theoretical framework that can be universally employed to establish rules of engagement by all those who use the sniper tactic, for both civilian and military operations.

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ERROR–AVOIDANCE THEORY: SNIPER EMPLOYMENT FOR MILITARY AND CIVILIAN LAW ENFORCEMENT

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Submitted in partial fulfillment of the
requirements for the degree of

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Sniper operations are high risk, high reward missions with unique traits and distinctive capabilities often resulting in great success or punishing failure. Within nearly all conceptions of sniper operations there is a perceived difference between civilian and military sniper engagements. This thesis presents an error-avoidance theory for guiding successful sniper operations across both domains. Inside sniper operations there are two critical errors that need to be avoided. These errors are defined as Type 1 and Type 2 errors. Type 1 errors are those that result in the death of an innocent individual. Type 2 errors occur when the targeted individual escapes the situation and the mission objective is not met, and thus the threat or potential threat remains active. Naturally, the goal is to avoid both errors. However, the rules of engagement established for any mission must, by necessity, privilege the avoidance of one error type over the other. The evaluation of three critical variables—operational environment, political and social context, and the stakes or risk in the situation—should prioritize which error to avoid. This thesis thereby establishes a theoretical framework that can be universally employed to establish rules of engagement by all those who use the sniper tactic, for both civilian and military operations.

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LIST OF ACRONYMS AND ABBREVIATIONS

APC	armored personnel carriers
BATF	Bureau of Alcohol, Tobacco, and Firearms
COIN	counterinsurgency
FBI	Federal Bureau of Investigations
HRT	hostage rescue team
JSOU	Joint Special Operations University
KLE	key leader engagements
PRT	primary response team
ROE	rules of engagement
SWAT	special weapons and tactics

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Dr. Bradley Strawser

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I. INTRODUCTION

A. ARGUMENT

Exploring the relationship between a man and his weapon has been a fascinating topic since the development of the rifle. The technique of precision fire from a concealed location to target a specific threat has played a significant role in both law enforcement and military engagements. We label this type of engagement as a sniper operation. Sniper operations have proven their effectiveness in history by resolving situations with precise and lethal efficiency while providing operator security with the proper use of space, cover, and concealment. Sniper operations have been employed for hundreds of years and have proven to be a valuable tool among combatants in all forms of conflicts. Sniper operations will continue to be used in future conflicts and are an important operation to be understood at all levels.

Within the sniper community the term "long-gun" is a common moniker used to describe the sniper rifle or a sniper operation. Originating from the extended length of the rifle used for precision fire, this term throughout the thesis will reference a sniper rifle or operation. In recent Iraq conflicts, snipers have been able to interdict enemy forces in urban environments such as the city streets of Baghdad and Tikrit. In Afghanistan, on remote mountainsides, sniper observer positions have provided over-watch for units conducting engagement in villages below. Across these and countless other contexts, sniper operations have proven their worth time and time again. They have also secured their place in the history books by enduring the test of time. My aim is to explore and contribute to this topic through an error-avoidance theory of sniper command.

My argument, at its roots, explains and also simplifies an integrated sniper theory and allows those tasked with executing, commanding, or supporting sniper operations to have a common framework from which to plan, support, and implement long-gun operations. The two types of organizations that are best known to utilize sniper techniques are military units and law enforcement agencies. The common perception that is held across these professions, and also in public opinion and the policy makers who

choose to employ such operations, is that these two groups' approaches to sniper operations have very qualitative differences. Bartlett, for example, highlights variances in military and police sniper operations. He suggests that vast differences lie in the range of shots taken, target selection based between actions, uniform, or positive identification of target, the degree of precision required, collateral damage, and the training received (Bartlett, 1999). In reference to police sniper operations, Bartlett states:

> There are no allowances for missing. Simply wounding his target may not save the innocent lives which are at risk. Therefore, the police sniper has to shoot at an area which will physiologically produce the best chance of instantly incapacitating his target. That target—the cranial vault—is slightly larger than a tennis ball. Although his target is much closer than the military version, the police sniper has to shoot with pinpoint accuracy, with the intent of a first shot stop. And collateral damage is completely unacceptable. (Bartlett, 1999, p. 12)

Although one could argue with some of his comments, Bartlett does highlight the common perceptions that are held within public opinion on the differences of military and police sniper operations. On the surface, Bartlett's assessment of those differences listed in his book and other components such as rules of engagement, guidelines, decision processes, command structure, authority procedures and technical equipment may seem to be crucial differences. However, the sniper world revolves around more than those key components listed above; the goal of every sniper mission, I contend, revolves around error management. By rooting the conceptual ordering of sniper operations around error management, we can produce a simple, yet powerful tool for unifying our analysis of all such operations.

In a sniper operation, the situation has already escalated to the point where those involved are considering life and death options for some of the players involved; the circumstances should rightly be considered a crisis. The ultimate objective of the sniper, resulting from specific fluctuating variables, is to rank order and potentially avoid Type 1 and Type 2 errors. A Type 1 error is defined as a situation where an individual other than the intended or liable target is engaged with the sniper's shot. In simpler terms, the Type 1 error is when the individual killed by the sniper was not the intended or liable target. A Type 2 error is defined as scenario in which the targeted individual escapes the situation

and the objective is not met, and therefore the threat or potential threat remains active. In simpler terms, the targeted individual gets away unharmed. This Type 1 and Type 2 error assessment and evaluation model is based off Gartner's arguments as expressed in "All Mistakes Are Not Equal: Intelligence Errors and National Security." Such an approach helps look at complicated sniper cases under a simplified but powerful lens. Gartner uses this method to evaluate intelligence errors and I will here use this method to assess sniper cases. Gartner states:

> When the dangers of inaction are low and the cost of action high the intelligence community is more likely to make a Type II error. If the dangers of inaction are high and the costs of military action low it is more likely to commit a Type I error. Understanding the lens through which people view information can improve intelligence. (Gartner, 2013, p. 634)

Using a similar understanding, as I have defined the Type 1 and 2 errors, I will explain that within a sniper situation, the primary route to success is to identify which error it is most important to avoid. An ordered prioritization of the error types allows the long-gun operators and command leadership to establish the most suitable rules of engagement to properly deal with these delicate conditions. This prioritization will vary depending on three main components; the operational environment, the social and political context, and the level of stakes, or risks in the situation. As these variables change in different sniper situations, the Type 1 and 2 Errors avoidance precedence will also. Thus the core of the proposed theory is avoidance of the errors, in preferential order. Of course, the primary object and the best-case scenario for any and all sniper operations is to avoid both errors. However, sniper operations are extremely complex and external factors are always affecting the outcome of the situation, making decisions difficult. Thus, this theory will assist in simplifying these circumstances and allow leaders and sniper operators to manage gains and losses by weighting Type 1 and Type 2 errors appropriately.

As the individual sniper and operations have developed, so has the technology that is used and integrated into a sniper operation. Many authors have written on the tactics, techniques, and procedures of sniper operations but few have looked at the broader context of the actual event. The theory that I am proposing in this thesis is applicable to *any* unit because the type and model of long rifle the sniper uses, or the

brand of scope or range finder, and so on, is irrelevant within my theory. The technological developments cannot be immobilized—human curiosity will not allow it and there will continuously be new and relevant discoveries that can assist precision marksmanship. Thus, one advantage of this theory is that it places all organizations employing sniper operations within a single choice framework, since it addresses the bigger picture: the key elements and decisions required for a successful sniper mission.

In his book *Stalk and Kill: The Sniper Experience,* Adrian Gilbert describes the process and development of sniping and also describes, through the eyes of real snipers throughout history, the factors that have changed and transformed (Gilbert, 1997). He states:

> The special pressures faced by a sniper—not least being the sight of the man he is about to kill—have imposed great physical and psychological strains, form which only the toughest survive. And if weapons and tactics have developed over the years, the human factor remains constant. The sniper is the ultimate hunter in a game where the quarry shoots back. This hunting instinct has changed little over the last two centuries, linking the sharpshooter of the American Revolutions to the professionally trained sniper of today. (Glibert, 1997, p. vii)

Throughout this book, Gilbert presents events from different time periods and discusses not only the tactical elements but the lasting psychological and moral concerns that are common among those who embark on this journey (Gilbert, 1997). This book articulates excellent historical and personal accounts and explores the technological developments of snipers, but in order to make this research relevant we need to jump the gap and explore sniper operations in *all* environments and present a theory that is practical for *both* military and civilian units. The reason for this is clear. In present-day sniper conflicts, the once distinct lines have blurred from black and white to undeniably gray, and although the development of technology has assisted in accomplishing successful missions, this shift drives the need for a unified sniper theory across both domains.

Conflicts in history in which sniper operations have been employed have transformed throughout time. In the context of war, it is evident that the way battles are started, fought, and finished has adjusted over time. World War II snipers approached

their missions very differently than snipers in the Iraq or Afghanistan Wars. Similarly, in the civilian sector, snipers are governed by either state or federal laws, which have their own flexibility and are subject to change. The types of situations that civilian snipers face each day oscillate where one day they are dealing with a distraught pregnant female holding a child hostage, to another day and different situation involving a barricaded standoff scenario. As stated above, this proposed theory will unify our thinking across these scenarios in regard to implementation; each sniper unit can employ it regardless of skill or capability.

The usefulness of this theory is also amplified due to the fact that sniper conflicts in both military clashes and the civilian sectors have drawn closer together. The sniper situations, if anything, have become increasingly complicated, thus any factors that can simplify the process are needed and welcomed. A specific reason this theory is relevant and useful is because of the convergence between the military and civilian law enforcement activities in both public security enforcement and overseas war engagements. This crossover has tested the boundaries of both civilian law enforcement personnel and military members. In the civilian sector we are seeing an increasing number of paramilitary type units being utilized. Peter Kraska and Victor Kappeler describe their research that illustrates an increase of paramilitary type units in civilian law enforcement and their direct link to the military in "Militarizing American Police: The Rise and Normalization of Paramilitary Units." Kraska and Kappeler state:

> Initially these units constituted a small portion of police efforts and were limited to large urban police departments. The constructed and publicly understood role of PPUs was confined to rare situations involving hostages, terrorism, or the "maniac sniper." Despite the camouflage of these common assumptions, there have been recent unmistakable signs of intensifying military culture in police departments. Although these units are highly secretive about their operations, obvious expressions of militarism are found throughout contemporary policing in the form of changing uniforms, weaponry, language, training, and tactics. (Kraska & Kappeler, 1997, p. 3)

Similarly, in the military environment, law enforcement type activities and solutions are progressing rapidly to solve conflicts, especially in counterinsurgencies and other irregular wars that are so dominant today. Kenneth H. Poole, Director of Joint Special

Operations University (JSOU) Strategic Studies Department describes John Alexander's viewpoint in his article, *Convergence: Special Operations Forces and civilian law enforcement.* Poole writes:

> Alexander asserts that success in southwest Asia will hinge, in part, upon U.S. and host-nation military operations that effectively incorporate some police-type tasks (e.g., gathering and securing evidence) and law enforcement operations by police units that require military-like support. (Alexander, 2010, p. ix)

Alexander believes as missions that the Special Operations force conducts converge with civilian law enforcement, additional training is required to advance effectiveness (Alexander, 2010). He is also a proponent the evaluation of civilian law enforcement applicability in special operations. Alexander is a retired military professional with combat experience in Special Operations and renowned author who recognizes this convergence.

Joseph D. Celeski is a senior fellow in the Joint Special Operations University and distinguished Special Forces Officer with global experience. Celeski's argument revolves around the importance of law enforcement activities in counterinsurgency. In his report entitled, *Police and Law Enforcement in Counterinsurgency (COIN)–The Thick Blue Line*, he states:

> Insurgents in Iraq and Afghanistan routinely target police patrols, stations, and law enforcement leadership. One of the reasons for this targeted violence is insurgents clearly understand police and other internal security personnel act as the first responders in counterinsurgency environments and frequently provide the most immediate check on insurgent activities. (Celeski, 2009, p. 1)

Celeski is another expert with practical hands-on experience that communicates the idea that effective policing can lead to successful counterinsurgency campaigns. Hence, with sniper operations producing effective results it would be beneficial to provide a *common* framework that both civilian and military commanders could work from. Celeski concludes his report with the keynote idea that effective policing can combat counterinsurgency. Some of his explanations include that the police and law enforcement personnel have existing legitimacy in the society thus supporting stability in the regions.

He also states that law enforcement entities commonly are the first responders to the damage inflicted by the counterinsurgency violence, and with appropriate responses the policing can displace the violence before it lays roots (Celeski, 2009).

Sniper operations are critical crisis situations that have significant impact at all levels, both civilian and military is the sniper operation. Sniper missions, if conducted correctly, can arguably be some of the most effective and important operations of any unit that carry its capability. Sniper operations require specific training unique to the normal police and military exercise. Therefore, due to the nature of this type of operation it has the potential to be productive or extremely counterproductive and cause severe issues on multiple levels. As support, one will not find a substantial amount of writing on snipers operation that has been successful but, to the contrary, there are countless articles on operations that have been tagged as failed missions. For example, some of the more prevalent and well known accounts have been the situations at Ruby Ridge, Waco, Iraq and Afghanistan where there has been speculation of misuse of the sniper. Loss of life, valuable time, and critical assets in forms of monetary and manpower have been expended due to these situations. An error-avoidance theory that bases its evaluation on the nature of the environment, the social political repercussions and factors, as well the stakes that hang in the balance will help delineate between, and give relative weight to, the Type 1 and Type 2 errors that are the ultimate considerations for sniper success.

B. ERROR AVOIDANCE MODEL

The model of Error Avoidance in Figure 1 shows the arguments I have developed above, and constitutes a unified theory of sniper operations. As variables are explored and costs of the errors are prioritized, the level of success in any sniper situation can potentially be enhanced. The Error-avoidance theory allows for any sniper element, at a baseline tactical ability, to implement a sound strategy, whether military or civilian, and enhance positive outcomes. The main considerations revolve around avoidance of errors identified previously as Type 1 and 2.

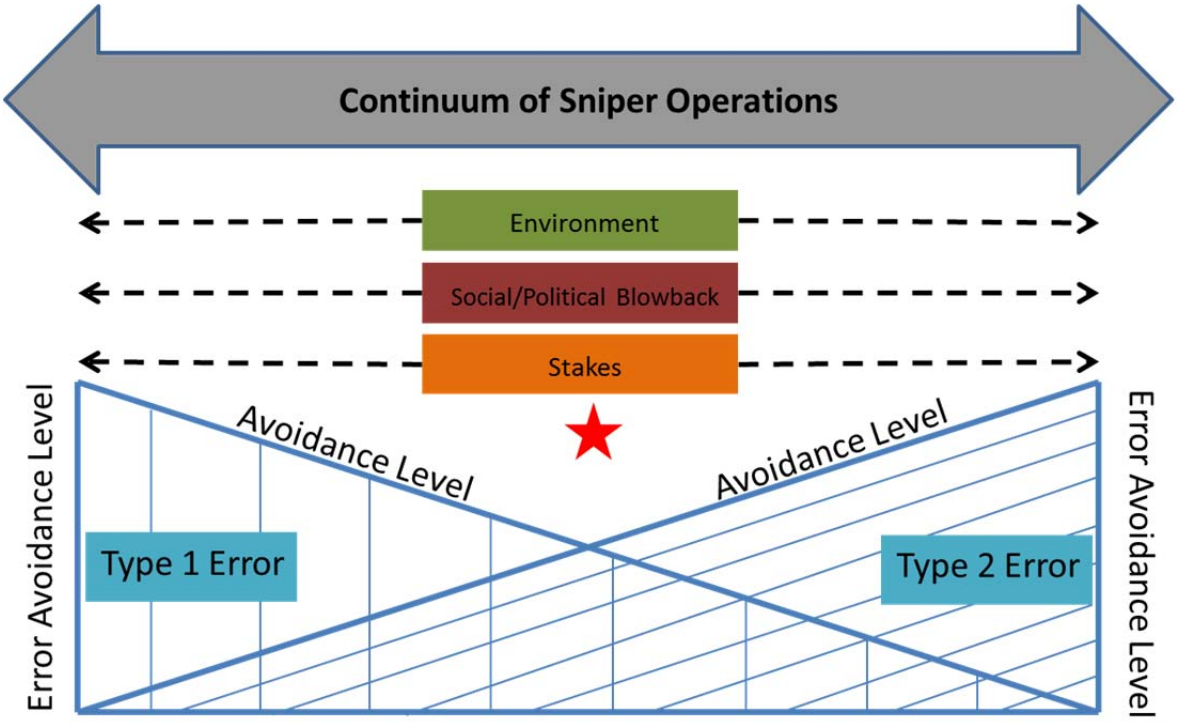

Figure 1. Pictorial Representation of the Model of Error Avoidance

The assessment of variables determines the type of error that is more costly in any specific scenario and that can assist the success level (see Figure 1). Certainly, as in any sniper situation, the variables shift and may not be clearly identifiable. Therefore, the theory presents a heuristic continuum that varies from total success to ultimate failure. The types of sniper operations depicted in the continuum also vary. The sniper attrition strategy in World War II would avoid different errors than a civilian hostage standoff would. The goal is to provide the best calculation that suggests which errors to avoid. These variables at times, have different weighted values depending on the situation that can cause a slide toward avoidance of one error or the other. This will be depicted in the following figures by the length of the dotted arrow that is associated with each of the respected variables. The longer the arrow, as shown in the figures, represents the stronger a relationship between that variable and avoidance of a particular error. In certain cases, the variables can have opposing affects that can affect the final preference of avoidance in large or small ways. Therefore, the variables in the same case may weight heavy toward a Type 1 avoidance and a Type 2 avoidance, which can shift the final preferences.

In the following chapters, examples of these types of situations will be outlined and thoroughly explained. The final preference of avoidance in the figures is depicted by the star, this will portray the effects of the combined variables and show which type error is suggested to avoid based off the Error-avoidance theory. These variables explore deep into the perceptions of the environment and personalities involved; they discover more than just the tactical evaluation and predictive analysis of the situation. These variables are as listed:

1. **Operational Environment:** The environment is the first indicator in which the sniper units gains principal insights into which error is central to avoid. The environment is critical to a complete understanding of the proper execution of a sniper shot. As suggested and shown in the illustration, sniper operations find their use across the full spectrum. For instance, the environments vary greatly, from "shoot on site" attrition scenarios as in a World War environment to an extremely selective shot that would only be made under certain criteria such as in a hostage scenario.
2. **Social / Political Context:** The social / political effect from a sniper operation also plays in as a significant variable. This type of effect drives deep into the lingering effects of a sniper shot. Every sniper operation has a social and political reverberation, the point being that these results can and will affect the operation, where it is in a positive or negative context. The social / political effect can place a large amount of pressure on the conduct of the operation. For example, a hypothetical situation in which an infant is held hostage by a distressed family member would create substantial disturbance within social and political realms if the infant was injured by the snipers bullet, thus, potentially placing an abnormal amount of political and social pressure on the sniper plan, action, and aftermath of the difficult situation.
3. **Stakes of the Target:** The stakes of the target has a distinct impact on the operation as a whole. The importance or popularity of the targeted individual can drive the nature of the operation. This variable plays into the perceptions of individuals that are looking or observing the operations from the outside inwards. An explanation that describes how this variable creates different paths would be the targeting of a Taliban leader in a remote village in Afghanistan, as opposed to targeting a well-known political figurehead who is mentally distraught over a failed election. These hypothetical situations described would affect the conduct of the operation. In simple terms, the effects of a political leader's death would produce a different outcome than that of a Taliban leader.

As shown in the Figure 2, the error-avoidance theory process follows a sequential process that can help develop and assisted with complicated decisions that always accompany these complex operations. The error-avoidance theory will aid leaders in developing, planning, and executing sniper operations. The ultimate goal of the error-avoidance theory is successful sniper operations. This theory will assist in development, planning and execution of a long-gun operation. Issuing the proper rules of engagement is one of the most central and critical areas in successful sniper operations and this theory will provide the baseline for fitting that need in an accurate and timely manner. As shown in Figure 2, it follows three main steps; evaluate the variables, identify avoidance preferences, and develop and execute the sniper operation.

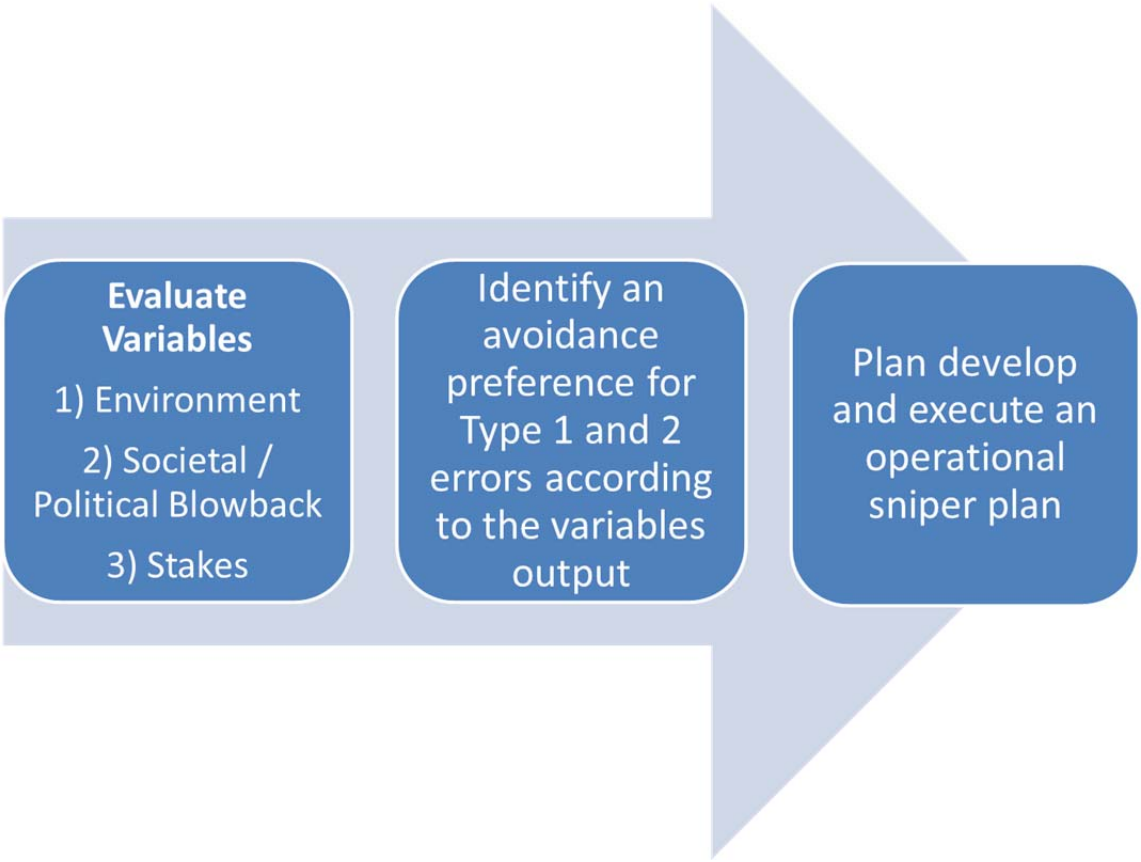

Figure 2. Error-Avoidance Theory Process

In the following chapters, to evaluate the error-avoidance theory, sniper cases will be explored using a systematic approach. Each case will be evaluated by using the theory's variables which will uncover and suggest potential flaws that could have been avoided. To understand and be able to evaluate each case a standard format will be followed. Initially, a summary of the case will be presented then the three variables will be explored in detail and finally, the conclusion will look at the Type 1 and 2 errors and their effects on the outcome. The range of cases, with differing variables, from both military and civilian situations shows the consistency and value of the error-avoidance theory. This format will be followed for each case to maintain consistency.

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II. CASE STUDY: RUBY RIDGE

In order to evaluate an error-avoidance theory it is reasonable to look into past cases in which sniper operations set the stage for dramatic results, both positive and negative. On 19 October 1995, in an opening statement before the United States Senate, Louis J Freeh, Director of the Federal Bureau of Investigation (FBI) stated:

> At Ruby Ridge, the FBI did not perform at the level which the American people expect or deserve from the FBI. Indeed, for the FBI, Ruby Ridge was a series of terribly flawed law enforcement operations with tragic consequences. (United States Congress, Senate Committee on the Judiciary, Subcommittee on Terrorism, Technology, and Government Information, 1995, p. 1)

The tragic consequences that Director Freeh refers to in these remarks are the deaths of a Deputy United States Marshal, a wife and a young boy. The wife, Mrs. Weaver, was killed by a sniper's bullet but that gunshot was not intended or even aimed at her. This was a tragic incident in which sniper operations played a role that was very public and deadly. A structured evaluation of this incident will show the benefit of the proposed sniper theory.

The actions at Ruby Ridge in August 1992 were the result of a series of escalating events that instigated the standoff between the Weaver family and law enforcement officials. It began in January of 1985, when the United States Secret Service began an investigation of Randy Weaver due to allegations of threats against the President and other governmental and law enforcement officials. Randy Weaver's associations with the Aryan Nation group also placed him on the government watch lists. Weaver eventually crossed paths with the Bureau of Alcohol, Tobacco, and Firearms (BATF). Weaver met a BATF informant at a World Aryan Congress and established a relationship with him. This informant eventually met up with Weaver at his house and purchased two illegal sawed off shotguns from him. The BATF approached Weaver with the hopes of turning him into an informant but Weaver refused and as a result the BATF issued a warrant for his arrest. The warrant was initiated because of Weaver's possession of unregistered firearms. As a precaution, the BATF arrested Weaver in January of 1991 while

pretending to be motorists in distress as opposed to attempting an arrest at his mountain top residence. Agents were fearful of instigating an unneeded conflict and they wanted to avoid the harm of Weaver's children and any other innocent civilians. A trial was scheduled for 19 February 1991, which Weaver failed to appear and an additional warrant for arrest for Weaver was issued. At this point, the United States Marshal Service got involved and between March of 1991 and August of 1992 they attempted to peacefully convince Weaver to surrender voluntarily. However, this produced no results; thus teams from the Special Operation Group of the United States Marshal Service began conducting reconnaissance of the residence in another attempt to develop a plan to take Weaver peacefully without harm to law enforcement officers or the Weaver family. On 21 August 1992, during a surveillance operation, a team of six Marshals looking for alternate places away from the cabin to arrest Weaver were discovered by one of the Weaver dogs. Randy Weaver, Sammy, his teenage son, Kevin Harris, an associate and Weaver's daughters followed the dog to investigate. The Marshals retreated back up the road and eventually identified themselves but Weaver turned around and ran back to the cabin. Following Randy Weaver's escape back to the cabin an exchange of gunfire erupted which resulted in the deaths of Deputy Marshal William Degan, Sammy Weaver and the dog (United States Department of Justice, 1994).

When the U.S. Marshals Service learned of the death of Marshal Degan they asked for and received FBI assistance in the form of first the FBI Special Weapons and Tactics (SWAT) team and later it's Hostage Rescue Team (HRT). These HRT teams consisted of snipers/observers. While traveling to the site the HRT advance team received information and drafted special Rules of Engagement (listed below) to address the danger they expected to encounter. According to the plan, a surrender demand would be delivered. In order to prevent an ambush by the Weavers or sympathizers in the area, teams of sniper/observer were stationed overlooking the cabin before the delivery of the surrender demand. The surrender demand was given on 22 August 1992 using Armored Personnel Carriers (APC) to deliver a telephone to the cabin. Prior to the APC departure, the sniper teams also moved into position to overwatch the delivery but before they left

the following Rules of Engagement (ROE) were briefed (United States Department of Justice, 1994). Drafted Rules of Engagement:

> 1. If any adult male is observed with a weapon prior to the announcement, deadly force can and should be employed, if the shot can be taken without endangering any children.
> 2. If any adult in the compound is observed with a weapon after the surrender announcement is made, and is not attempting to surrender, deadly force can and should be employed to neutralize the individual.
> 3. If compromised by any animal, particularly the dogs, that animal should be eliminated.
> 4. Any subjects other than Randall Weaver, Vicki Weaver, Kevin Harris, presenting threats of death or grievous bodily harm, the FBI rules of deadly force are in effect. Deadly force can be utilized to prevent the death or grievous bodily injury to oneself or that of another. (United States, Department of Justice, 1994, p. 17)

On 22 August 1992, Lou Horiuchi a FBI sniper, fired two shots. Horiuchi believed his first shot was directed toward Kevin Harris, who was armed and appeared to be making movement to shoot at a helicopter which was running observation missions. Horiuchi had actually aimed this shot at Randy Weaver; Weaver's awkward movement led Horiuchi to believe that he had missed his target. Approximately twenty seconds later Horiuchi identified what he thought was the target of his first shot running back to enter into the cabin, he fired a second shot, leading the target because of his quick movement. The second bullet killed Vicki Weaver, Weaver's wife, who was standing behind the door to the cabin.It also wounded Kevin Harris. Horiuchi later testified that he did not see or know that Vicki Weaver was standing in the doorway and that he was not targeting her. Combined, the two shots wounded Kevin Harris and Randy Weaver and killed Vicki Weaver. It took another 8 days to convince Harris and Weaver to surrender, but finally, on 30 August, Harris did so. On the next day, Weaver surrendered, ending the Ruby Ridge standoff but not the controversy (United States Department of Justice, 1994).

A. ENVIRONMENT

The environment in which this case developed and eventually came to a close was constantly changing and as a result caused issues that ultimately lead to a Type 1 error

where FBI sniper Lou Horiuchi mistakenly shot and killed Vicki Weaver. Several points involving the changing environment made it difficult for the leaders to appropriately address the situation.

The first environmental point I will address is related to the physical geography. Once the federal law enforcement contained the area, the situation posed no real threat to those outside of the participants on and surrounding the Ruby Ridge location. The situation was ultimately contained to the small tract of land in Northern Idaho directly endangering those involved or living within the Weaver residence. The environment within the Weaver house also complicated the situation. Lane Crothers, in his book *Rage on the Right*, describes the development of the Weaver's family religious environment. Several key transition points intensify the Weaver's beliefs and actions. The first of these points was suggested to be after Vicki's reading of *The Late Great Planet Earth* by Hal Lindsey and the Weaver's adoption of its teachings. This book presented an apocalyptic religious struggle between good and evil forces, in which the "good guys" were Christian literalists who took the bible literally, implementing and following its every word in their daily life and the "bad guys" as foreigners, people who were of color, communist, and basically anybody of different beliefs. The Weavers lived a Legalist lifestyle, in which Randy began pressing his religious extremist viewpoints at work which led to extreme tension between co-workers and supervisors. Randy Weaver became increasingly isolationistic due to his religious fundamentalism. The second transition took place when Randy, in 1983, moved to Montana and then to Idaho to escape and distance his family from neighbors and conflict. In 1986, Randy attended the Aryan Nations World Conference where the teaching states that whites are the superior race and that movement and political avenues that supported right of minorities were seen as personal attacks on the Aryan followers (Crothers, 2003). This type of home and lifestyle environment created an atmosphere where the federal law enforcement agents became the ultimate evil in the Weavers eyes and when backed into a corner easily had the personal will to fight and no difficulties with a prolonged clash. Crothers describes these different environments inside the Weaver household and that of the federal officials after the initial firefight when Sammy and U.S. Marshal Degan are killed,

> From the perspective of the commanders in Washington, D.C., however, the events that occurred on August 21 proved Randy Weaver's irreconcilable hatred of the federal government. From the perspective of those inside the Weaver's home, the events, including Sammy's death, proved the federal government's irresponsible evil. Much of the tragedy that followed was grounded in these fixed, rigid worldviews. (Crothers, 2003, p. 83)

On the opposite side, for the law enforcement agencies, the environment was also complicated by the fact that local, state, and three different federal law enforcement agencies played a role in the issue. As the leadership role transitioned from ATF to U.S. Marshall's Service to the FBI, conflict and confusion rose as well as a need for a quick solution. This quick solution, in my opinion, shaped the rules of engagement that were in effect when Lou Horiuchi shot and killed the incorrect target.

In the article, "What Happened on Ruby Ridge: Terrorism or Tyranny?" Betty Bobratz, Stephanie Shanks-Meile, and Danelle Hallenbeck state, "Randy and Vicki Weaver, white Christian separatists, were singled out for government scrutiny because of their Christian Identity religious views and their attendance at the annual Congresses of Aryan Nations" (Dobratz, Shanks-Meile, & Hallenbeck, 2003). A clear understanding of the differing environments within this situation could have pushed the officials toward avoiding making the critical Type 1 error, which sparked national attention, primarily of a negative connotation, on the law enforcement officials involved.

B. SOCIAL / POLITICAL BLOWBACK

Insight into the social and political effects in the Ruby Ridge Case presented themselves physically and vocally at the bottom of the Ruby Ridge Hill. Law enforcement officials had to maintain a roadblock out of fear of any assistance to the Weaver family or disruption of the operation (Crothers, 2003). Crothers referring to the blockade at the bottom of the hill states,

> This barrier became a rallying point for skinheads, white supremacists, antigovernment libertarians, and anyone else in the area with an ax to grind against the authorities. They began a ten-day vigil in which Weaver supporters threatened agents, accused authorities of being "baby killers," and vented their rage against what they saw as inappropriate intrusion of

> the federal government in the life of a small mountain community and one of its families…The barricade also became ground zero for a large contingent of television, newspaper, and magazine reporters who, in the absence of any news from the mountain itself, interviewed protesters and took pictures of the growing contingent of federal agents, helicopters, and armored vehicles that were descending on Ruby Ridge. Weaver's message, thus, was carried to the nation even as he remained quiet on top of his hill. (Crothers, 2003, p. 85)

The amount of interest and chaos that was stirred because of this incident was extraordinary. In the aftermath of this operation the social and political effects from one sniper shot outraged many people and negatively impacted the FBI and its reputation. Crothers suggests, "Ultimately, in many ways Horiuchi became the public face of the FBI's oppressive evil for right-wing ideologues in the United States" (Crothers, 2003). Politically, Horiuchi's shot became a nightmare scenario for the FBI and ultimately a negative perception for all federal law enforcement agencies. Any mention of the Ruby Ridge case in today's society is always reflected as negative. Thomas Lujan, author of the article presented in *Parameters*, "Legal Aspects of Domestic Employment of the Army," discussed the negative aftermath of the standoff at Ruby Ridge. Lujan states,

> The FBI actions were subsequently investigated exhaustively by the Department of Justice and by Congress. Five senior members of the FBI were suspended and finally disciplined, and the government settled a wrongful death suit brought by Vicki Weaver's survivors for over $3 million. Randy Weaver was acquitted in a criminal trial of the original firearms charges and absolved of criminal liability for the death of the federal marshal. (Lujan, 1997, p. 90)

A significant portion of the post incident investigations largely evolved around the unusual ROE that was used but never officially approved by the FBI Headquarters. As identified above by ROE numbers 1 and 2, the agents were authorized to engage armed targets in an offensive manor, which was a departure from the standard use of using deadly force, which was used only in self-defense or in defense of others who were themselves placed in pending danger that would cause death or serious harm (Lujan, 1997). Was this an over aggressive approach or a justifiable assessment of the situation in which was considered explicitly hazardous? I would suggest that the ROE in sniper operations, both military and civilian, are extremely important; but, the real breakdown in

the system had to do with improper assessment of the prosed variables resulting in tragic consequences caused by not avoiding the Type 1 error. The social and political effects of killing an untargeted individual outweighed the risks that were currently presented on ground.

C. STAKES

What is the realistic impact of killing Randy Weaver or Kevin Harris? That is the true question when assessing the variable, "stakes." Were the actions of the law enforcement officials equalized by Randy or Kevin's genuine threat? These are tough questions that may never be answered fully, but evaluating the impact of the deaths of these targets may help in prioritizing errors to avoid. In this case, as suggested above, with physical environment controlled by the law enforcement officials, and the political and social blowback obviously increased by the media and groupies hanging around at the bottom of the hill, the impact of a stray shot could be easily recognizable as an apparent catastrophe.

As shown in Figure 3, based on a critical evaluation of the theory's variables, the emphasis of avoidance would be placed on the Type 1 error, avoiding a sniper shot that would kill an unintended target. In my assessment, the point at which Horiuchi took his second shot placed an excessive risk on breaking the Type 1 error, which it did resulting in the death of Vicki Weaver. Although legally the shot was deemed reasonable within the eyes of the FBI director, it should and could have been avoided with potentially a cleaner outcome (United States Congress, Senate Committee on the Judiciary, Subcommittee on Terrorism, Technology, and Government Information, 1995).

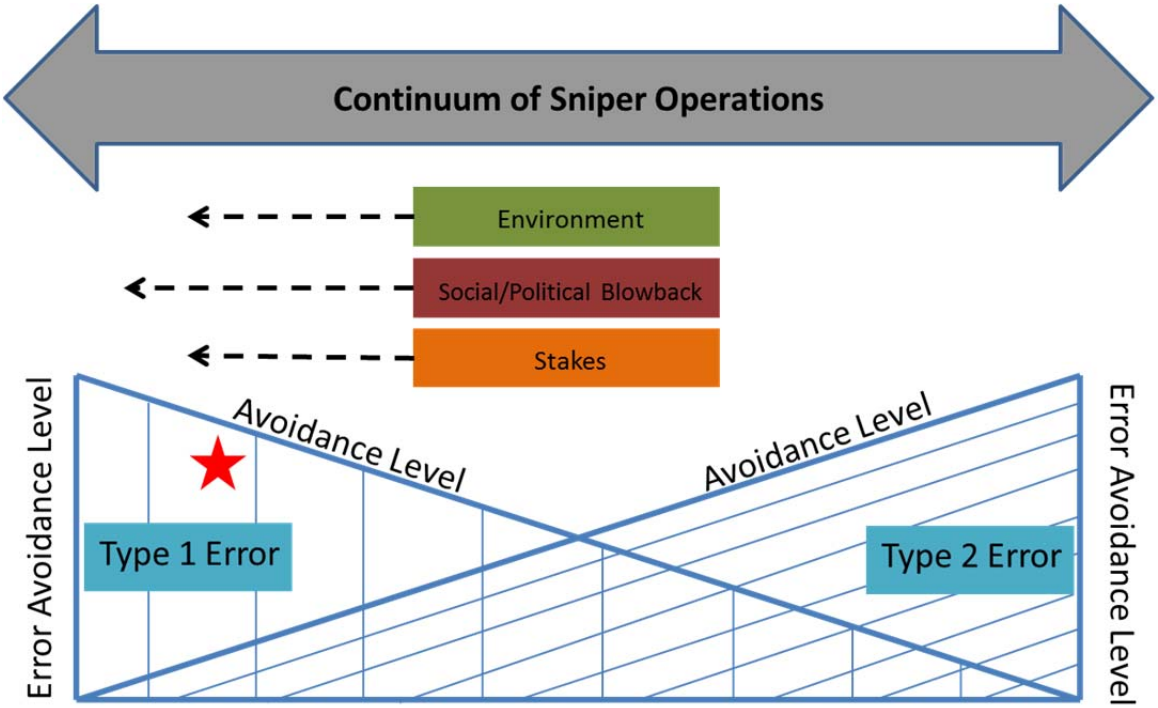

Figure 3. Ruby Ridge

In conclusion, Figure 3 demonstrates that each of the factors in the Ruby Ridge case show that avoidance of a Type 1 error is prioritized over a Type 2 error. The strongest factor in the Ruby Ridge case is the outcome of the social and political blowback. In this scenario, the federal, state, and local law enforcement agents involved dealt with substantial repercussions, due to the negative blowback that originated from the sniper shot that killed Vicki Weaver. These undesirable effects have lingered on even years after the incident. In addition, a stronger assessment of these three variables would have potentially also shown the need for an adjustment in the rules of engagement that the law enforcement officers were operating under. An increased emphasis on avoiding a Type 1 error, as suggested by the error-avoidance theory, would have supported an improved ending.

III. CASE STUDY: HUNTING HUMANS: RAMPAGE IN SAN YSIDRO

One of the worst single gunman massacres in the United States occurred on 18 July 1984, when police in San Ysidro, outside San Diego, California, responded to a shooting incident that involved Special Weapons and Tactics snipers. James Huberty entered a McDonald's restaurant around 4 p.m. that day and proceeded to shoot everyone in sight. Huberty carried multiple weapons including an Uzi carbine, a Browning high powered rifle, and a Winchester model 1200 shotgun. During the 77-minute crisis, Huberty strolled around the McDonald's restaurant creating chaos: killing and injuring everyone he could at a staggering pace. The age range of those murdered and wounded was sickening, spanning from 8 months to 74 years. Huberty also fired at children riding bikes in the surrounding area outside the McDonald's, and at a nearby fire truck. In the end, Huberty shot 251 times, killing 21 people and wounding 19 others (Dickinson, 2013).

Mike Granberry, in a *The Los Angeles Times* article about Huberty's wife, states, "In what now is a well-publicized comment, Huberty told his wife that he was leaving to go 'human-hunting'—and ended up at a McDonald's" (Granberry, 1984). Michael Rosario, of the San Diego Primary Response Team (PRT), was among one of the first officers to arrive at the chaotic site. Huberty did not waste any time; he immediately fired at Rosario and other members of his PRT, which consisted of six law enforcement officers. The PRT team moved fast and, according to Dickinson, stated that the primary response team moved rapidly towards the building. Within the first 20 minutes, starting from the time the initial call to police dispatchers was received, a command post had been put in place, and a full cordon of the entire area had been established. Additionally, a recall of all members of the San Diego Police Department was sent out to assist the frenzied situation and they were able to relieve the patrol officers that had established the inner perimeter by 4:45 p.m. Some victims had been able to escape the restaurant by a back door. They were able to give information to the police officers, including the fact that the shooter had more than one weapon and that there were others still inside the

building who needed medical care. Snipers from the SWAT team were able to set up and get into position at 5:04 p.m; an on-site supervisor gave the “green light’’—permission to fire at Huberty . However, due to poor visibility from the sunlight glare, tinted and gunshot cracked windows, a clean shot did not present itself, and Huberty continued his shootout including firing at a SWAT officer (Dickinson, 2013).

At this time, the SWAT commander had not arrived at the scene yet and he withdrew the “green light” order until 5:13 p.m. when he arrived at the site. Sniper teams reported they had not had an opportunity for a clear shot during that time, so it was reported that they did not miss an opportunity to stop Huberty’s rampage and that the change in orders had no ill effect. SWAT sniper Chuck Foster was positioned on a nearby rooftop. Finally, at 5:17 p.m., he was able to identify Huberty and fired. Huberty was struck and killed by Foster’s bullet. With Huberty down, the SWAT team cleared the area to ensure there were not any additional threats, then the medical personnel entered the McDonald’s and began to take control of the horrible situation. Triage and treatment was initiated for the wounded and the 21 dead victims were removed.

Interestingly, the McDonald’s Corporation was sued by some of Huberty’s victim’s family members. On 9 July, 1987, it was stated from the Court of Appeals of California, Fourth Appellate District, Division One, that the victim’s family based their argument as such:

> Their case was built from the assumption that McDonald’s Plaintiffs sued for damages for wrongful death and personal injuries on theories of negligence and premises liability, alleging McDonald’s failed to provide adequate safety devices or security personnel to protect customers from dangerous and known risks. In support of their theory of liability, plaintiffs allege McDonald’s knew its San Ysidro facility was in a high-crime area and its employees were so concerned over the criminal activity within the immediate vicinity they had solicited a private security company to offer its services to McDonald’s. The security service’s proposal to McDonald’s management and ownership cited the area’s high-crime rate, increasing gang activity and nearby incidents of violent crimes which would have endangered McDonald’s patrons had they occurred on its premises. Claiming economic reasons, McDonald’s declined the security service offer to provide a uniformed security officer at $5.75 an hour. (Lopez v. McDonald’s Corp., 193 CA3d 495, 1987)

This case was overturned. McDonald's was found not liable because it had no responsibility or duty to provide defense against this unforeseeable assault against its employees and patrons (Lopez v. McDonald's Corp., 1987). In addition, and particularly prescient for this thesis, a lawsuit was also filed against the San Diego Police Department by the victims' surviving family members, contending that the law enforcement officers did not stop Huberty quickly enough, thus not adequately protecting the innocent civilians within the McDonald's. The finding of the Fourth District Court of Appeals was that there was not a distinctive relationship between the police and victims and that the police could not be liable for failing to protect the victims (Dickinson, 2013).

Even though the suit was dismissed by the court, this case led to much discussion and in some cases revision of the role of SWAT and Snipers in this type of tragic situation. Many agencies depended on SWAT or other similar teams with sniper capabilities to respond to active shooters, even when this resulted in delay. Unfortunately, in most cases SWAT teams are not the first on the scene. Several lessons in the article that were addressed by Dickinson, a Lieutenant in an Iowa police department, were drawn from this incident. Some of those lessons relate closely to the error-avoidance theory of sniper command being explored in this thesis. Those are, as described by Dickinson:

- Patrol Officers must act decisively when people are being killed, time delay in waiting for SWAT/Sniper must be considered,
- Expect first information to be conflicting and confusing, one gunman with multiple weapons may be perceived as multiple shooters,
- On-site persons must be allowed to make critical decisions after improved training,
- Be prepared to act to save lives,
- This type of incident can happen anywhere, large city or small community. (Dickinson, 2013, p. 2–3)

As this case explores a mad gunman's rampage with intentions to kill as many people as possible, it highlights the error-avoidance theory's relevance in which command leadership could have directed specific instructions, whether preset or not, to resolve situations of this nature as quickly as possible.

A. ENVIRONMENT

An outside assessment of this incident would most likely suggest that within this case the time between Huberty opening fire on the individuals inside the McDonald's and him being neutralized by the police sniper was stretched out needlessly. Every moment that went by with Huberty's threat unblocked, more innocent civilians were at risk of being killed, which suggests that this case committed a Type 2 error. Even though Huberty was eventually killed by sniper fire, a plausible argument, which was submitted in the courts, proposed that Huberty was left to continue his rampage for too long. As opposed to the Ruby Ridge incident, law enforcement officers on the scene could clearly see the carnage that was in progress. Huberty had shot and killed innocent people both inside and outside the fast food restaurant. The atmosphere in this situation, as chaotic as it was, provided law enforcement officials at a minimum, insight into the violence that was occurring before their eyes. This environment, a public McDonald's, presented extremely difficult decisions for law enforcement officers, specifically the SWAT sniper teams. With only one real target among the many frantic civilians, whose actions were based on survival, the job of resolving the situation became an extremely difficult task. However, the first possible opportunity to neutralize the target in these situations should be capitalized on with deadly force. With a hasty assessment of the environment and on-going active shooter situation, a Type 2 error, or even an extended amount of time the target is allowed to engage and kill civilians, can produce the worst result possible: innocent deaths that could have been prevented. It was stated in the *San Diego Union-Tribune* that Huberty had an additional 100 rounds of unexpended ammunition that with his mindset could and would have been an additional 100 casualties ("21 die in San Ysidro Massacre," 1984).

Nevertheless, it can be easily seen that the environment in this circumstance also drives the snipers to avoid a Type 1 error, not shooting an innocent civilian. The environment was populated with innocent civilians who unfortunately stepped into a bad situation that afternoon by choosing that McDonald's eatery. The desperate nature of the individuals both inside and outside the restaurant combined with obstructed vision due to fragmented glass and vehicular movement most likely made it difficult to gain a clear

picture into what was happening inside. Therefore, a concern that was relevant at the time would have been shooting an innocent person, therefore adding to the death toll. These environmental factors would shift the snipers toward avoiding this Type 1 error. However, as in many sniper cases, a variable will often shift toward avoidance of a Type 1 error and another variable will push toward a Type 2 error. The error-avoidance theory forces an ordered preference in order to base the rules of engagement from. This produces clarity to the sniper teams having to take a shot. This allows and supports clear and accurate decisions when time is a critical factor. Nonetheless, in my assessment within this case the imminence, on-going active threat that had to be immediately stopped drove the preference for avoiding a Type 2 error.

B. SOCIAL / POLITICAL BLOWBACK

The social and political effects that lingered on after this bloody rampage lasted years, similar tothose of the Ruby Ridge incident. The aftermath of the tragedy included nationwide media coverage and the situation is known as one of the worst massacres in United States history, with 21 slain and 19 injured. With the actions of the law enforcement officers and decisions of the McDonald's franchise under severe scrutiny, the media painted a negative picture of them both, implying that both were partially responsible for the deaths of the individuals in and around the San Ysidro McDonald's that day. The *San Diego Union-Tribune* online article recounting the event stated, "Media were setting up in Los Angeles for coverage of the summer Olympic games and 200 reporters flooded into San Ysidro to record the carnage. At the time, it was the largest one-day toll taken by a single killer in American history" ("21 die in San Ysidro Massacre," 1984). This increased number of reporters facilitated the rapid dispersal of the innocent with graphic pictures and accounts of the shooting in multiple forms of public media. The social and political blowback of this case was significant and played a large role in making a correct error avoidance preference choice. Although potentially unforeseen at the time because of the randomness of the case, it most definitely needs to be taken seriously and applied in future sniper operations. This attention will be able to assist topics such as operational planning, developing rules of engagement, and delegation of responsibility. In the way this case developed, it seemed as if the social and

political blowback variable pushed the preference toward avoiding a Type 1 error with the amount of time that was taken before the target was shot and killed. However, looking at this type of sniper case the theory would suggest that there would be significant effects from the social and political variable when focusing on avoidance of either Type 1 or Type 2 errors, but, as the death toll was quickly increasing it makes natural sense to minimize the loose of life and therefore should push the social and political blowback variable toward a Type 2 error.

C. STAKES

The impact of Chuck Foster's sniper shot that killed Huberty was the opposite of what many engagements like that produce. In many cases, the aftermath of a sniper taking an individual's life is questioned and evaluated with a fine tooth comb, looking at every detail, scrutinized at every turn. However, in this account, the question was not why did officials take this man's life, but, why did they not neutralize him before the death of 21 people? These kinds of occurrences are rare but should be examined because they can help us understand cases where the avoidance of Type 2 errors should be given preference, since Type 2 errors in these cases have the potential to be the most violent and life-costing events. Within this situation, the stakes of a shot *not* taken when presented can result in lives lost and the importance of stopping the assailant at some levels outweighs risks that might have to be taken—such as the risk of a Type 1 error. Speed in these circumstances often plays as the largest and most important determinant of success or failure. In the end, the stakes of killing Huberty himself were minimal because he physically showed all involved that his intentions were to inflict as much destruction as possible. That is, he was undeniably liable to be killed in order to block the on-going threat he was posing. The realization of this and evaluation of the variables would push future snipers and commanders to place emphasis on avoiding a Type 2 error in such cases.

Unfortunately, tragedies like this are unpredictable: when disturbed people kill numerous human beings in an unexplainable storm it is difficult to understand why. Realistically, the reasons behind these malicious acts will probably never be revealed but

this proposed theory can potentially support snipers and their units in assessing the situation and making quick and astute decisions. In the past, we have seen repeat situations similar to this at Columbine, CO, and more recently, Newtown, CT, where mass murders have occurred. The error-avoidance theory presented here will assist in identifying these types of events that have parallel variables and push snipers and their chain of commands to avoiding the catastrophic Type 2 error. Represented in Figure 4, preference placed on evading a Type 2 error where the target escapes or even is allowed to extend the time of freedom he or she has, as occurred in this case, is vital to mission accomplishment.

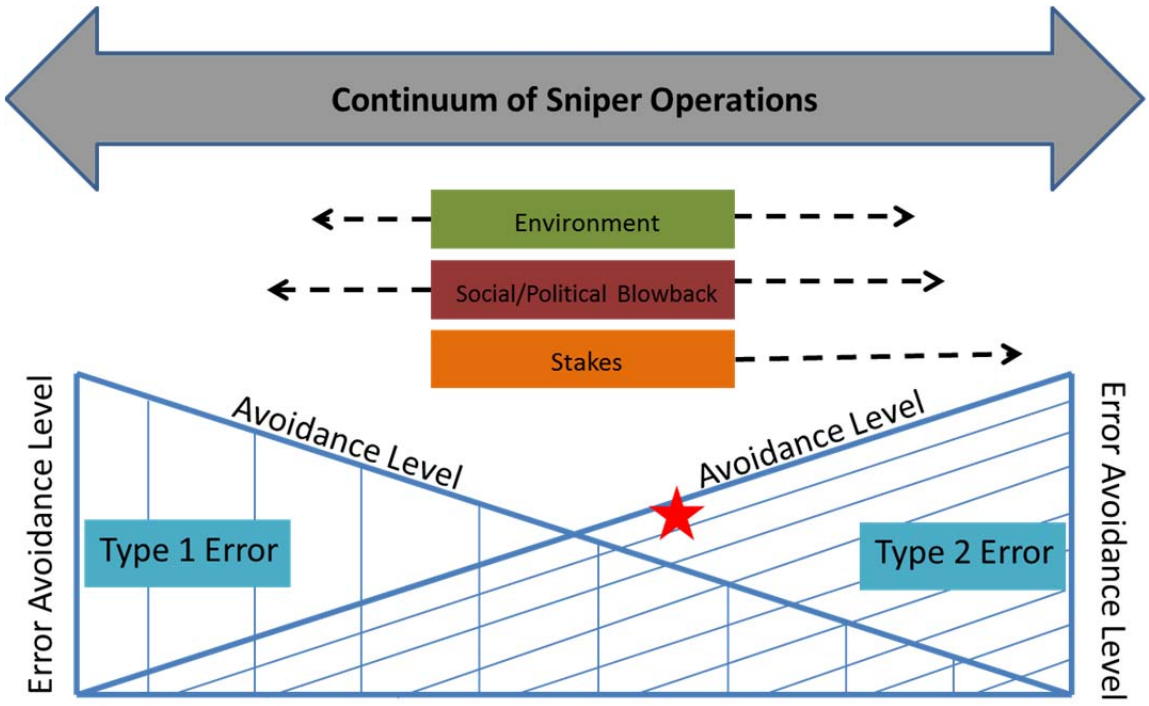

Figure 4. San Ysidro Massacre

The shooting at San Ysidro depicts a complicated sniper engagement because as the variables present themselves they show that they can present reasons for avoiding both type errors. Figure 4 demonstrates that both the environmental, social, and political blowback variables pose arguments for avoiding both Type 1 and Type 2 errors. The weight of the variables favor eluding a Type 2 error with also slight indications toward

the opposite error, but not enough to change the final conclusion. The stakes variable strongly favors avoiding a Type 2 error, as in this case, subsequently resulting in loss of human life. Thus, use of the error-avoidance theory produces clear direction when developing, planning, and executing long-gun operations that strongly resemble this situation. Regrettably, cases that mirror the San Ysidro massacre will occur again and the error-avoidance theory has shown that preference for avoiding a Type 2 error will yield the better outcome.

IV. CASE STUDY: KLE SNIPER ENGAGEMENT

The error-avoidance theory seeks to provide best-case solutions for command decisions in every sniper situation. As discussed in the argument, the theory disregards the skill of the unit or agency operating. This is a feature, not a shortcoming of the theory, for it allows broad application across theaters, levels of command, and types of sniper operations. Within some sniper missions the potential controversy level is very low and with others, as in the Ruby Ridge case, it can be extremely high. A correct theory for sniper operations needs to account for these differences when it makes command decisions favoring the avoidance of one error type over the other. The sniper mission in Afghanistan examined in this case study will show that the error-avoidance theory demonstrates its ability for implementation in all situations and environments.

In Afghanistan, the mountainous terrain provides for torturous travel conditions but can also provide some optimal elevated observation hide-sites for long-gun operators to do their best work. Throughout the Afghanistan conflict, military units would consistently engage the local populace in meetings commonly referred to as key leader engagements (KLE). The unit leaders would discuss various topics with the village elders or village leaders in efforts to accomplish objectives such as identifying the security threat, building rapport, gaining intelligence, and developing a situational picture in order to make better decisions and assessments within the assigned area. The KLE's provided valuable information but not without cost. As improvised explosive devices diffused from Iraq and became a common threat in the Afghanistan war these missions became all the more dangerous and important. The visits to the KLE most often required a convoy along some dry secluded river beds and along steep mountain sides where every turn was taken cautiously.

In this case study, I will examine one particular real-world KLE mission. This KLE mission was, in many ways, no different than any other. The intent of the KLE was to engage with the village elder on various topics; at the top of the list, the reoccurring IED strikes within his village on coalition forces. The unit had intelligence that kept tracing the IED material and facilitators back to this village and the last visits had been

met with opposition and a less-than-welcoming reception. Therefore, an observation position consisting of a sniper team had been placed the night prior to the meet. The village was located in a deep valley with only one main road in and out, numerous trails scattered throughout the village and surrounding mountains but only one road that was vehicle accessible. The unit's previous visits had been met with sporadic small arms fires but, due to the terrain, identifying the origin of the shots was close to impossible. The village elder consistently denied responsibility of knowledge of those actions and assured the unit leadership that it was not members of his village. However, intelligence connected the IED and small arms fire back to the village. The sniper team was tasked with surveillance of the meeting site and the observable path into and out of the village.

The following morning, the command team convoyed to the village, and met with the village elder to address the pressing security matters. Following the meeting, the unit leaders and village elders moved on foot to a shaded area for a final glass of chai before departure. At this point, the local partnered Afghan force working with the unit intercepted radio traffic indicating that an IED ambush was in place targeting the partnered convoy scheduled to leave the village within the next few minutes. The information was relayed to the sniper team, which focused its attention on activity within the village. The unit leadership, aware of the situation, carried on as normal and loaded to depart and moved down the road carefully and slowly until just out of sight and sound of the village. Once the convoy was around the bend in the road, an individual back at the village moved to the roof of one of the huts and proceeded to relay detailed information to the ambush team, which had placed a series of six IEDs along a quarter-mile stretch of the single road approximately three miles south. Unknown to the enemy spotter, every incriminating word spoken over the rudimentary radio was immediately translated and relayed to all vehicles and the sniper team. The sniper team wasted no time dialing in on the rooftop target with the radio at his ear. At approximately 700 meters, the shot echoed through valley several times over and instantly struck its target's center mass of the chest cavity. The impressive impact knocked the target backward off the hut and down to the entryway several meters below. The precise shot had instantly killed the individual. The

convoys crept forward, cleared and removed the IED threats, but were not able to engage those who emplaced them.

With this example of an effective sniper operation, we find that the military unit involved decided to prioritize avoiding the Type 2 error, letting the target escape and the threat continue unthwarted, over the avoidance of committing a Type 1 error. Whether the military unit actively or inactively considered the variables the error-avoidance theory emphasizes, they ultimately decided that as the target presented itself it was best to neutralize the threat to avoid additional attacks and further threat. Although the civilian and military sniper operations are often deployed under diverse settings, the variables discussed present a helpful way to prioritize key choices and make decisions that align with the situation and are coherent across all setting. This case from Afghanistan demonstrates this effectively, as will be shown.

A. ENVIRONMENT

Although Afghanistan presents one of the more complex environments that the United States military and law enforcement units have operated in, this case is a prime example of a sniper operation that prioritized avoiding a Type 2 error. As the situation played out, it allowed for an extremely "clean" operation in which both errors were able to be avoided. In this section of Afghanistan, the rugged mountains and deep valley produce narrow corridors that restrict travel both by vehicle and on foot, to minimal paths. These avenues had always weighed heavily on those with a military mindset operating in a hostile country where the enemy attacked and vanished before ever identifying their location. These restrictive corridors have provided excellent locations for the opponent to inflict damage on U.S. or coalition partners despite their superior fire power. The harsh environment in this situation pushed the military leaders and unit members to proceed with extreme caution and set up the sniper teams as an extra intelligence and precision fire source if needed. The physical environment combined with

an accurate assessment of the relational and cultural environment drove the military members to plan and factor in dangerous contingencies, which in turn assisted the snipers with a successful operation.

As a result, the environment variable pushes this situation toward avoidance of a Type 2 error and therefore all the factors that go into a long-gun operation are tailored toward putting emphasis on not letting the target escape. Of course, a Type 1 error was also a relevant factor in the operation but not one that overpowered the risk of letting the explosive devices detonate. As the situation presented itself, the lone target on the hut roof minimized the risk of shooting an unintended individual. In summary, the environmental constraints produced a high risk of a Type 2 error. The Type 1 error was still factored into the operation but did not have the detrimental impact that was associated with letting the individual on the roof facilitate the attack on U.S. troops.

B. SOCIAL / POLITICAL BLOWBACK

The political and social impact of killing this individual in reality was minimal. Taking a human life in any and every situation is, of course, a difficult and complex occurrence that is never taken lightly. However, in reality, in conflicts and wars such as this there is an understanding and, at some levels, an acceptance of the loss of life. This, as true as it is, does not take away from the magnitude of a sniper taking a life. In this case, the impact of the operation was at many levels contained to the individuals who lived within this village and the members of the military unit conducting the operation. Thus, the social and political aspects did not extend much past those barriers because within the remote parts of Afghanistan a tribal culture is very much alive. Therefore, the impact on one tribe does not necessarily affect the neighboring tribe or village. As opposed from the other cases such as the massacre in California and the Ruby Ridge case where media played a significant role in the dispersal of the happenings, this situation had minimal outlets and outside of those involved and the surrounding villages, which

learned by word of mouth, there was no significant repercussion from the sniper operation. All of these dynamics weighs heavily in favor of a strong preference for avoiding a Type 2 error, as the impact of a Type 1 error would be minimal while potential harm resulting from a Type 2 error would be significant. Again, the social and political blowback from targeting and killing a known facilitator of enemy operations that directly targeted U.S. and coalitions forces pushes allows the operations leadership to put a greater emphasis on a Type 2 error, which in this case, proved to potentially save the lives of many.

C. STAKES

As stated and evidenced, the emphasis of a Type 2 error in this military operation proved to be extremely valuable and prevented potential causalities both at the present time and for the future. The risk of not interdicting this target, which was coordinating a devastating attack on friendly forces, would have been taking an unnecessary chance and would have significantly increased the risk of harm to friendly forces. Two viewpoints on the stakes variable formed from this sniper situation and both pointed to a preference for Type 2 error avoidance. On one side of the discussion, the hazards of not neutralizing this individual were high and on the other, his death and the impact it would have on the situation as a whole would not be seen as a substantial factor, thus the decision to engage was the clear choice. Displayed in Figure 5, this case study shows how the variable assessment and accurate avoidance measures push the employing sniper operations to the center of the chart, which is furthest away from both errors and the best end state possible. In this case, given that all three relevant factors push the same direction on our scale, with varying strengths, the error-avoidance theory concludes that sniper operations with a strong preference for avoiding a Type 2 error should be implemented, as they were.

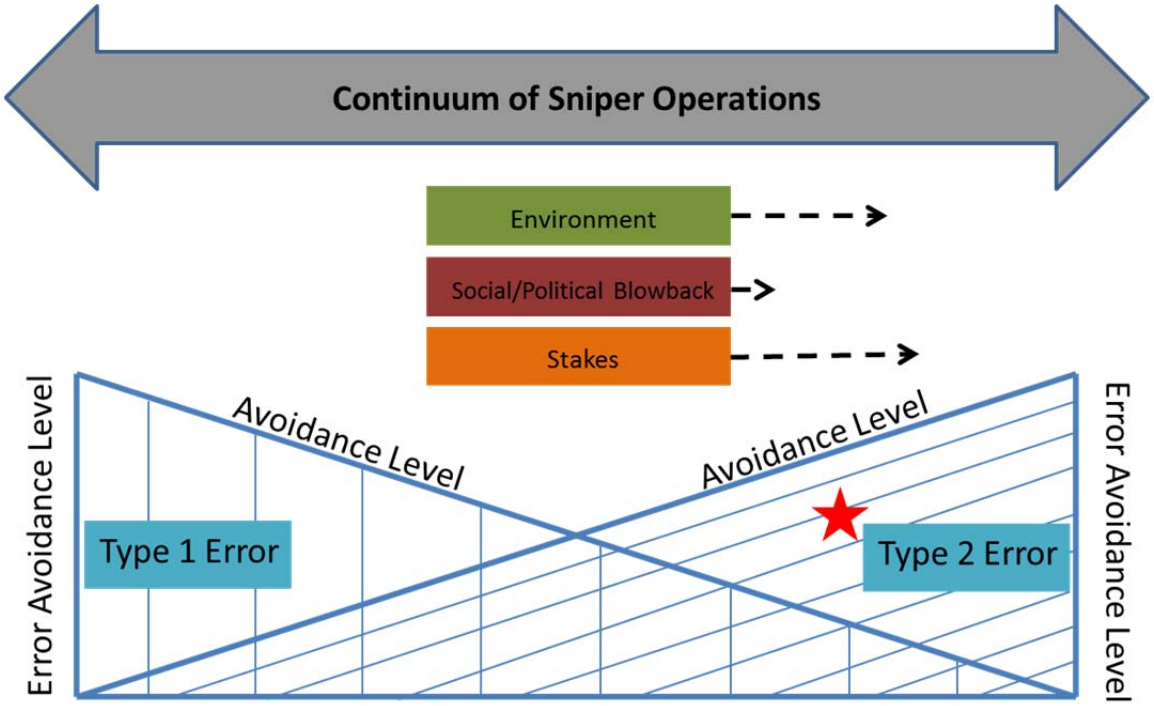

Figure 5. KLE Sniper Engagement

So in Figure 5, each factor presses the theory toward either Type 1 or Type 2 avoidance. The environmental, social and political blowback, and stakes variable in this military case study, as can be seen, presses in favor of eluding a Type 2 error. The social and political blowback in this case was minimal and bore no substantial push toward a Type 1 error. Thus, this variable did not have a strong impact on the decision process. Unlike the previous case studies, these variables yielded the clearest decision annotated by the minimal conflictions of the arrows on either side of the variable. Combined together, these three variables produced the conclusion of avoiding a Type 2 error, in this case, allowing the individual to escape. The error-avoidance theory allows the long-gun commanders and decision makers to develop a plan that will properly address things such

as the rules of engagement, in order to execute a successful mission. The rules of engagement for this case were important because it gave clear guidance to the concealed sniper on what actions he could engage with deadly force. The dominate factor, as shown in Figure 5, is the stakes variable and the potential risks posed if the target had not been neutralized. Therefore, in the end, the variables combined, showed a strong preference toward avoiding a Type 2 error. Again, the goal of any sniper operation is to avoid both errors, but a clear preference toward one or the other will provide a path toward a successful operations.

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V. CONCLUSION AND RECOMMENDATION

A. CONCLUSION

In conclusion, this error-avoidance theory can be a useful and functional tool for producing successful sniper operations. As shown in the case studies, the variables lead toward a path that if evaluated, will assist in reducing the amount of errors in these high stress conditions. However, in any critical, high pressure situation, decisions are often made with little or no time to truly evaluate what is occurring.

This theory presents three critical variables to assess because they have the greatest impact on the outcome. The environmental, political and social blowback and the stakes or risks involved, when explored provide a channel to understanding how to approach the goal of resolution. The error-avoidance theory provides significant assistants in developing, planning, and executing long-gun operations. It also delivers specific assistance in outlining reasonable rules of engagement and dependable standard operating procedures which verifies it relevancy in the sniper arena. In order for sniper missions to maximize potential for success, they need very specific guidance that allows the operator to engage targets under different conditions. The very essence of a sniper mission includes neutralizing enemy targets that are not a direct threat to the operatives behind the gun, but have in the past, or will be in the near future, a legitimate hazard. This theory will assist with the entire sniper operation. In the past there has not been a one-size-fits-all solution to situations that require a sniper skill set and the unfortunate realism of the incident is that in many cases the event ends in loss of life. Therefore, as military and civilian long-gun operators face the grueling task to make decisions that deal with the ultimate question, it was my intent to provide a relevant, unified, way to cut straight to the heart of the matter, by avoiding errors that result in failure.

The ultimate goal was to create a clear and consistent way to think about sniper operations across all domains. What the error-avoidance theory does is helps commanders and decision makers figure out how to execute these sniper operations all while avoiding critical errors. However, following the basic laws of physics, just as one

action causes a reaction, when you work toward avoiding one type error, the more vulnerable you become to the other type error. As in the error-avoidance theory, when a military or civilian sniper unit places an emphasis on not letting the target escape, a Type 2 error, they logically create a path that could lead toward shooting the wrong person, a Type 1 error, and vice versa. Just the realization of this fact is a step in the right direction and can help build that bridge between failure and success in addition to facilitate that crucial movement toward the ultimate goal of avoidance of all errors.

B. RECOMMENDATION

The recommendation is quite simple, adaptation of the error-avoidance theory universally across those agencies and units that require a need for a sniper capability. As shown by history, a sniper's skill set is one of increasing importance. As presented in the case studies, the error-avoidance theory can be applied against military, civilian, or any other long-gun operations. Looking through the lens of the error-avoidance theory, the reality is that these situations, military or civilian are not as different as some would suggest. The environment, social and political blowback, and the stakes or risks, all in some way, lean toward indications of Type 1 or Type 2 error. The difference lies within how each unit decides to handle the circumstances, therefore, highlighting the usefulness of a universal sniper theory.

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